

**STATE OF VERMONT
PUBLIC SERVICE BOARD**

Docket No. 7032

Joint Petition of Vermont Electric Power Company, Inc. (“VELCO”), Green Mountain Power Corporation (“GMP”) and the Town of Stowe Electric Department (“Stowe”) for a Certificate of Public Good pursuant to 30 V.S.A. § 248 authorizing VELCO to upgrade a substation in Moretown, Vermont; construct .3 miles of side by side, single pole tap; construct a switching station in Duxbury, Vermont; construct 9.4 miles of 115 kV transmission line; upgrade an existing GMP 34.5 kV subtransmission line; construct a substation in Stowe, Vermont; and for Stowe to construct 1.05 miles of 34.5 kV subtransmission line in Stowe, Vermont.

**PREFILED REBUTTAL TESTIMONY OF
TERRENCE J. BOYLE AND
ADAM M. PORTZ**

**ON BEHALF OF
VERMONT ELECTRIC POWER COMPANY, INC.**

The rebuttal testimony of Mr. Boyle and Mr. Portz responds to the aesthetic mitigation proposals of the Department of Public Service and the Gregg Hill Residents.

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**PREFILED REBUTTAL TESTIMONY OF
TERRENCE J. BOYLE AND ADAM M. PORTZ**

**ON BEHALF OF
VERMONT ELECTRIC POWER COMPANY, INC.**

1 Q1. Please state your name, title and business address.

2 A1. My name is Terrence J. Boyle. I am a registered landscape architect and planning
3 consultant with an office in Burlington, Vermont.

4

5 My name is Adam M. Portz. I am a registered landscape architect employed by T. J.
6 Boyle & Associates.

7

8 Q2. Have you previously testified in this docket?

9 A2. Yes.

10

11 Q3. What is the purpose of your testimony?

12 A3. We respond to the testimony of Mr. Raphael and Messrs. Orr and Abraham.

1
2 Q4. Have you reviewed the testimony of the Department's witness, David Raphael and his
3 responses to discovery?

4 A4. Yes. We have reviewed and revisited each site and we have considered the mitigation
5 recommendations by Mr. Raphael.
6

7 Q5. With respect to mitigation recommendations for the Duxbury Tap to Mile 0.5 section in
8 DPS-DR-1, pg. 15, has VELCO explored a location further west as recommended by Mr.
9 Raphael?

10 A5. Yes. This was examined early in the process and was rejected because of steep cross-
11 slopes, development plans and landowner resistance to a new right-of-way. The proposed
12 route with careful selective clearing and right-of-way management will not be unduly
13 adverse. The sensitive area that we have discussed in our prefiled testimony (VELCO
14 DSF-3, page 31) is the southbound section of Route 100 as it crosses I-89 that does align
15 with the flatter 2nd leg of the proposed route from the angle to the tap (VELCO RCJ-24-
16 2). Since it is nearly flat in this section, it will be less visible from the Route 100 area.
17

18 Q6. Do you have concerns regarding the use of single pole configuration in this area as
19 recommended by Mr. Raphael?

20 A6. In terms of aesthetics, we have compared the design heights required for single pole
21 versus H-frame, as proposed by VELCO, and conclude that the lower 115 kV H-
22 frame through this section is preferable to the taller self-supported single pole
23 construction.
24

25 As indicated in our prefiled direct testimony, a key concern was to protect the views to
26 the Bolton Mountain range as recognized in the Duxbury Town Plan. We believe that
27 an H-frame structure in this location at approximately 15-20 feet lower than a single

1 pole is desirable, and is consistent with the majority of the 115 kV structures
2 throughout the state.

3
4 Please also refer to the testimony of Ryan Johnson and Kim Moulton with regard to
5 single poles.

6
7 Q7. Does VELCO agree with the planting recommendations for mitigation purposes
8 through this section as described in DPS-DR-1, pg. 15?

9 A7. Generally, we agree. Vegetative plugs and street tree/screen plantings in certain areas
10 would be effective. Retention of existing vegetation will be subject to reliability
11 concerns, but VELCO is committed to preserve as much existing vegetation as
12 possible in areas of aesthetic sensitivity. Final landscape mitigation plans can and will
13 be provided and reviewed as part of the Post-CPG process.

14
15 Q8. Do you concur with the recommendations in DPS-DR-1, pg. 16-17, at Blush Hill
16 Section Mile 0.8 to Mile 2?

17 A8. Yes.

18
19 Q9. Do you concur with the recommendation in DPS-DR-1, page 17, at Blush Hill Road
20 Mile 2.0 to 2.8 that addresses the reroute, which is depicted on DPS-DR-5?

21 A9. No, for several reasons:

- 22 1. The DPS route involves additional properties that have no existing right-of-way
23 for a questionable improvement.
- 24 2. The objective in VELCO's reroute was to reasonably mitigate the view from Blush
25 Hill Road by insuring that poles did not impinge on the view of the Worcester
26 Range. It was not VELCO's intent to background the structures completely with
27 the middle ground vegetation. By dropping the poles down the slope
28 approximately 50 feet, the poles will marginally break the foreground tree line,
29 depending on the vantage point of the viewer on Blush Hill Road. The DPS-DR-1

1 photos on page 63 and top of 65 show the insignificance of the poles in the broad
2 panorama. The photo at the top of page 65 depicts the topographic feature (right
3 side of the photo under two poles) that VELCO's proposed reroute avoids by
4 dropping to the east below this sudden gradient change which is not depicted on
5 the DPS-DR-6 cross-section.

- 6 3. The foreground of views from the Blush Hill Road is interspersed with random
7 vegetation which is likely to increase over time providing a complex pattern of
8 vegetation and open space, a desirable condition for 'absorbing' the transmission
9 line in the landscape.

10
11 Q10. Do you agree with Mr. Raphael's recommendation to use single pole configuration
12 throughout this section?

13 A10. Yes, with the exception of the structures located near the historic Wallace Farm
14 (approximately Mile 2.7 to 2.9). As stated in our prefiled testimony, we recommend
15 using H-Frames across the pasture, limiting their height to about 50 feet, and careful
16 placement of them along the bench of slope if additional right-of-way can be acquired.
17 Limiting the structure height below the tree line to the east is very important in
18 preserving the view from Blush Hill Road and the historic Wallace Farm to the
19 Worcester Range.

20
21 Q11. Mr. Raphael has indicated that unless the transmission lines at the Waterbury
22 Reservoir are undergrounded, there will be an undue adverse impact. What is your
23 response to this recommendation?

24 A11. Mr. Raphael has presented several exhibits (DPS-DR-7 through DPS-DR-14) which
25 relate to the Waterbury Reservoir Crossing and the aesthetic impacts of the proposed
26 crossing, including viewshed maps and simulations. We believe that these exhibits
27 have misleading qualities and do not accurately represent the nature of the Reservoir
28 Crossing and therefore, Mr. Raphael has misjudged the aesthetic impact of the
29 Waterbury Reservoir Crossing.

1
2 Q12. In your opinion, are the simulations that Mr. Raphael has submitted accurate
3 representations of the proposed project? Please explain.

4 A12. No, they are not. Our first concern is the validity of DPS-DR-9 through DPS-DR-16.
5 Our second concern has to do with the process Mr. Raphael has used in the creation of
6 the simulations submitted as part of DPS-DR-1 which have led to misinterpretation of
7 the aesthetic impact of the Project.
8

9 Q13. Please explain the concerns and conclusions that you have reached by analyzing
10 exhibits DPS-DR-9 through DPS-DR-16?

11 A13. The first concern, specifically in DPS-DR-13, is that the proportions of the simulated
12 transmission structures and conductors do not appear correct. The conductors of the
13 34.5 kV line and the 115 kV line will span the Waterbury Reservoir in parallel sag.
14 This design was intended to provide a more aesthetic array of conductors to reduce
15 the visual impact. Mr. Raphael has presented a condition in DPS-DR-13 that does not
16 accurately portray VELCO's proposal. Although the top of structure elevation differs
17 between the proposed 34.5 kV and the 115 kV, the dramatic difference that Mr.
18 Raphael presents is also not accurate. For example, the top of structure elevation for
19 the south 34.5 kV structure is 712.83'. This is derived from taking the base elevation
20 of 642.83', as represented on RCJ-24, page 1/13 and adding the structure height of
21 70.0 feet. The resultant top of structure elevation is 712.83'. The top of structure
22 elevation for the south 115 kV structure is 721.5'. The difference between the two is
23 8.67' or 8'-8". With respect to DPS-DR-13, the two structures on the southern side
24 of the reservoir do not accurately represent the 8'-8" difference considering the
25 photograph was taken approximately 3200 feet (0.6 miles) away from the crossing.
26 The same formula applies to the structures on the north side of the reservoir.
27

28 The second concern is the inconsistency in the proportions of the photographs
29 presented. Two of the photographs were provided by T. J. Boyle & Associates, one

1 of which was altered by Mr. Raphael. The effect of doing so here misleads the viewer
2 as to the information presented. The proportions of the photographs are important
3 because they directly relate to the human perception of the view presented and the
4 focal length. For example, in DPS-DR-10, Mr. Raphael has altered the original
5 photograph by cropping the foreground (the bottom of the photo) which presents a
6 more dramatic zoom or focus on the structures and therefore unfairly impacts the
7 perception of what the photograph is presenting. We have submitted the original as a
8 comparison (Exhibit VELCO Rebuttal TJB/AP-1). Additionally, because none of the
9 photographs were taken by Mr. Raphael, he is not aware of the specific location where
10 the photographs were taken or the focal lengths for two of the images.

11
12 Although these points may appear insignificant, the importance of photograph
13 proportions, focal length, and viewer location are very important. They are described
14 in greater detail below.

15
16 Our last concern is the resolution of the simulated photographs provided. If one
17 compares DPS-DR-12 and DPS-DR-13, it is evident that the existing conductors (as
18 shown in DPS-DR-12) are less visible than the simulated conductors in DPS-DR-13.
19 Although there is a difference in thickness between a 34.5 kV conductor and a 115 kV
20 conductor, the difference from the viewer position would not be as noticeable as Mr.
21 Raphael represents. A higher resolution image would have allowed Mr. Raphael to
22 portray a more accurate representation of the proposed conductor thickness.

23
24 Q14. Would you please describe the method, as you understand it, that Mr. Raphael has
25 implemented in the creation of the photo simulations presented in DPS-DR-1.

26 A14. The exhibits Mr. Raphael created that present simulated transmission lines were
27 created using the method he has described in his discovery response (DPS 2nd set,
28 Answer 14). Mr. Raphael states, "The simulations presented in DPS-DR-10, 13 and
29 16 were constructed in Adobe Photoshop CS operated under Mac OS 10.3. All

1 heights and locations were determined by cross-referencing existing conditions
2 embodied in each photograph with the data presented in the text and drawings of T.J.
3 Boyle & Associates' Aesthetic Analysis Report and in VELCO Exhibits RCJ-19
4 through 23. This information stated existing clearing dimensions, as well as
5 approximate heights of existing poles and that of the trees bordering the right-of-way.
6 Approximate proposed pole locations and extent of rights-of-way were determined by
7 GIS Data and aerial photographs provided by Sandy Rowe of VELCO. Existing
8 dimensions and height references were overlaid on the photographs and proportionally
9 extended as necessary. Simulated pole heights and proposed clearing dimensions were
10 extrapolated from this data. Sag lines of the proposed structures over the Waterbury
11 Reservoir are documented in RCJ-24 (Page 9/20). The diminution in relative size of
12 each element to account for distance was determined, to the best of our ability, by
13 examining the diminution in size of existing vegetation and pole heights, as well as the
14 locations of proposed elements as provided by VELCO. Pole designs, heights, and
15 clearing data for the Waterbury Reservoir Crossing were specifically referenced from
16 RCJ-22 and RCJ-24 (Page 9/20). The colors represented in the simulations are based
17 on the colors of the existing structures, as presented in the original photographs.
18 Water levels within the reservoir vary according to the date the photographs were
19 taken. Currently the reservoir is partially drained.”
20

21 Q15. Do you believe that this method provides an accurate simulation in this case?

22 A15. No. We believe that there are significant flaws in this methodology, particularly given
23 Mr. Raphael's statement that, "Existing dimensions and height references were
24 overlaid on the photographs and proportionally extended as necessary," and "The
25 diminution in relative size of each element to account for distance was determined, to
26 the best of our ability, by examining the diminution in size of existing vegetation and
27 pole heights, as well as the locations of proposed elements as provided by VELCO."
28 If we take DPS-DR-13 as a specific example, there are no existing pole structures
29 visible, no road signs, no buildings, and no way of determining the "diminution in size

1 of existing vegetation.” Mr. Raphael has no reference to determine exactly where and
2 how tall the proposed pole structures and conductors will be in the photograph. Mr.
3 Raphael admits to not creating a 3-D digital model and therefore he has no way of
4 accurately replicating or scaling proposed structures. Thus, he can not accurately
5 represent VELCO’s proposal. By using this method, Mr. Raphael has presented
6 photographic simulations that are inaccurate and misleading.

7
8 Q16. Please explain the method that you use in creating photo simulations and how that
9 method produces more accurate results?

10 A16. The method that T. J. Boyle and Associates implements in the creation of photo
11 simulations is a three part process. These are gathering data, creating a digital model,
12 and rendering the simulation.

13
14 Gathering Data

15 The first stage begins with capturing data about the photography to be used in the
16 simulation. When taking the photograph it is very important to note the exact location
17 and elevation where the photo was taken, the horizontal angle of view, time of day,
18 camera, film, and focal length used. If a 35mm film camera is used, the negative or
19 positive film is scanned at 4000 dpi to obtain a very high quality digital image. If a
20 digital camera is used, the zoom used for the photo is recorded and converted to the
21 corresponding focal length using a formula provided by the manufacturer. The
22 resulting digital image is used as the original photo for the simulation. Additionally,
23 information regarding the location, elevation, and size of any permanent existing
24 structures that can be seen in the photograph is also recorded. All of this data will be
25 used for verifying the computer model that is constructed in the second phase, creating
26 a digital model.

1 Creating a Digital Model

2 Separate from the original photographic image, a digital model is created with three-
3 dimensional modeling software. AutoCAD Land Development Desktop 3 was used to
4 create the model for the VELCO Lamoille simulations. The model is built to include
5 the landform within the photograph, usually created from digital elevation model
6 (DEM) files available through the Vermont Mapping Program. Any other existing
7 visible structure is also digitally recreated and added into the 3-D model to be used to
8 verify scale and the angle of view. Next, the data gathered for the elevation, location,
9 and direction of the original photographic image is input into the modeling program
10 and a 'camera view' is set up to replicate the original photo. This 'camera view' is
11 created using a simulated focal length and is placed at the precise location in the 3-D
12 model that corresponds to the actual picture location in the field. This 'camera view'
13 is then used to make an image of the 3-D model, replicating the view as captured in
14 reality. Due to the fact that this 'camera' can export a digital image that exactly
15 matches the pixel dimension of the existing photographic image in combination with
16 replicating the focal length with which the photo was taken, an identical perspective is
17 created, and therefore scaling between the two images is unnecessary. The two
18 images are then overlaid using Adobe Photoshop, and the existing ridgelines and any
19 other existing structures can be used to verify the accuracy of the simulation. If there
20 are any minor inconsistencies between the two images, the camera settings can be
21 adjusted accordingly, and a new image created until the simulated image accurately
22 replicates the base photo. After the simulated image is aligned within the original
23 photo, all of the supplemental information in the digital image is removed, leaving the
24 subject of the simulation perfectly located and scaled in the context of the existing
25 surroundings.

26
27 Rendering the Simulation

28 After the two images have been overlaid in Adobe Photoshop, a series of steps are
29 followed to accurately portray the proposed structures and conductors. Existing

1 conditions in the original photograph are studied, and any changes that are necessary
2 before the simulation is rendered are made. For example, if distribution lines or poles
3 need to be removed because they are not in the proposal, we will edit the original
4 photograph to remove them. Additionally, the foreground and background elements
5 in the photo need to be identified in order to realistically place the proposal into the
6 original photo. For example, if a proposed pole will be partially obscured by existing
7 vegetation, this must be portrayed in the final simulation.

8
9 Next, it is necessary to give the proposed elements a realistic color and texture, which
10 are typically gathered from elsewhere in the original photograph, though a separate
11 photograph is sometimes used. The computer generated elements are then used as a
12 backdrop over which the borrowed colors and textures are placed. This effectively
13 imitates the size and shape of the proposed elements from the 3-D image, and still
14 portrays the proposed elements in a realistic manner. The rendered structures and
15 conductors are then merged into the original photograph, keeping in mind the layering
16 of existing items that may be in front of or behind the simulated elements.

17
18 There are several advantages to using this three-part process. When there are not
19 many existing objects within the view, using a 3-D model makes scaling the simulated
20 objects or verifying the scale much more accurate. The chance of error in scaling is
21 greatly reduced if all the information is correctly documented when capturing the
22 original photograph. It also allows the simulated objects to be accurately located, both
23 horizontally and vertically, within the image, and to be proportionately correct with
24 respect to distance and the effects of perspective.

25
26 It should be recognized that simulations are a tool like a cross-section drawing, a
27 viewshed analysis, or a line of sight diagram. Each tool is to assist in perceiving and
28 understanding the proposed objects, whether buildings or transmission lines.
29 Simulations can only represent a fixed point or view. However, as we move about in

1 a three dimensional world, the vantage point and our perceptions change, informed by
2 recall, expectation, current activity, and a myriad of factors. Simulations, when
3 accurately performed, are time consuming and expensive and should be reserved for
4 the most important situations.

5
6 Q17. Would you briefly explain the difference between Mr. Raphael's methodology and the
7 method you use?

8 A17. The two processes differ in that ours involves the three step process we have
9 described, and Mr. Raphael uses only one step. He has not gathered data about the
10 photograph location used in his simulations. We have accurately located where the
11 photograph was taken and at what elevation. Additionally, we have located three
12 reference stakes in Waterbury Center State Park as additional reference points because
13 the view lacks such information. He does not create a digital terrain model that
14 includes all visible ridges, mountains, and foreground, or existing structures. He does
15 not insert digital 3-D models of the proposed line design into this 3-D digital terrain
16 model. Additionally, and perhaps most importantly, he does not use a computer
17 generated camera view that mimics the actual photograph. Mr. Raphael's method as
18 stated in his discovery response is similar only in that he uses Adobe Photoshop to
19 render proposed structures and conductors, which according to this methodology, he
20 has no way of determining where and how tall the structures will be.

21
22 Q18. Have you prepared a simulation of the Reservoir Crossing?

23 A18. Yes. We have provided an existing photograph and a photo simulation of the
24 Reservoir Crossing taken from approximately the same location as the photograph
25 presented by Mr. Raphael in Exhibit DPS-DR-13. They are attached as Exhibit
26 VELCO Rebuttal TJB/AP- 2 and 2a.

27
28 Q19. Do the results of your simulation differ from those of Mr. Raphael's Waterbury
29 Reservoir Crossing?

1 A19. Yes. In our simulation, the structures both to the north and the south of the reservoir
2 are significantly lower than in Mr. Raphael's simulation. The increment of change
3 represented by a second set of conductors, when viewed from the Waterbury Center
4 Day Use Area will not have a dramatic aesthetic impact. The northern structures in
5 our simulation are completely obstructed from view by vegetation. The overall height
6 of the conductors above the ground is also much lower than in Mr. Raphael's
7 simulation, and the lines in our simulation are also running in parallel sag, which
8 reflects VELCO's proposal. This reinforces our judgment that the Waterbury
9 Reservoir Crossing is not an undue adverse impact.

10
11 Q20. Does Mr. Raphael's viewshed map (DPS-DR-7) accurately represent the visibility of
12 the line crossing in the area surrounding the Waterbury Reservoir?

13 A20. No. For example, DPS-DR-7 clearly demonstrates that the reservoir crossing is not
14 visible from Waterbury Center State Park. However, Mr. Raphael presents a photo
15 and a simulation (DPS-DR-12 and 13) that clearly indicates the visibility of the line
16 from that location. The viewshed map appears to be misleading and does not
17 accurately portray the visibility of the line crossing. In addition, because the viewshed
18 map does not account for existing vegetation, most areas from which the line appears
19 to be visible are not accurately shown.

20
21 Q21. Does VELCO's proposed crossing of the Waterbury Reservoir represent an undue
22 adverse impact in your opinion?

23 A21. No. As indicated in our direct prefiled testimony, there will be an adverse impact from
24 the termination of Blush Hill Road and for boaters on the water in the vicinity of the
25 crossing, but this will not be shocking or offensive because of the existing 34.5 kV
26 conditions, the limited viewshed from which the change can be seen, the limited
27 number of viewers within the viewshed who are likely to perceive the addition of a
28 second circuit, and the fact that electrical transmission lines have historically been part
29 of our cultural landscape for over a century.

1
2 There is no clear written community standard at the town, region, or state level that
3 prohibits the existence or expansion of this crossing. There is a clear standard that
4 affects this crossing and that is the National Electric Safety Code that sets standards
5 for clearance above navigational waters, depending on the size of the water body.
6 VELCO and its consultants have met these standards which dictate the pole heights.
7 The added heights apparently allow the removal of the warning devices (the balls) at
8 the crossing by providing greater clearances for both circuits. The removal of these
9 eye-catching devices is an important mitigation measure. Additionally, the electrical
10 standards for water clearance that drive pole heights provide for more mature
11 vegetation to be managed in the corridor around the structures and along the
12 shoreline, further mitigating any visual impact associated with the crossing.
13

14 Finally, the cost of Mr. Raphael's proposal, \$4.6 million, is out of all proportion to the
15 aesthetic mitigation achieved.
16

17 Q22. At mile 5.3 to 5.6, Mr. Raphael indicates in DPS-DR-1, page 81, and his
18 recommendations on page 24, that single poles should be used and yet stay below the
19 tree line as viewed from Gregg Hill Road. Is it your opinion that this is possible?

20 A22. No. We have recommended H-frame structures here because with the 350 foot ruling
21 span of the 34.5 kV, the H-frames with the horizontal array of conductors has the
22 potential to be approximately 20 feet lower than vertically arrayed conductors on a
23 single pole. At this location the reduction of height is important to minimize skyline
24 potential from Gregg Hill Road as one looks out across the attractive meadow and
25 wetland (compare VELCO Exhibit RCJ-19 with VELCO Exhibit RCJ-20). Since the
26 viewer position at Gregg Hill Road is generally 90 degrees to the corridor, the three
27 poles will be mostly in alignment and we believe below the middle ground tree line at
28 the far end of the meadow.
29

1 Q23. Do you agree with the other mitigation recommendations presented by Mr. Raphael
2 for Mile 4.0 to 5.7, Gregg Hill Area?

3 A23. Yes.
4

5 Q24. Have you reviewed the single pole option advocated by Mr. Raphael in DPS-DR-1,
6 page 25 and 26, for mile 6.8 to 7.7?

7 A24. Yes we have, and we agree with the single pole concept, with two sets of davit arms,
8 if Petitioners can satisfy electrical reliability issues. The beginning and end location
9 will be determined by the degree of reliability as well as aesthetic considerations. An
10 advantage of the taller structures in a vertical arrangement is that it may allow the
11 retention of some danger trees that would have to be removed with the two parallel
12 circuits. Additionally, increased conductor ground clearance may allow for taller
13 vegetation in the managed corridor, especially near the structures.
14

15 VELCO has flagged clearing limits and danger trees through the Black Bear Run
16 neighborhood, based on its two line proposed clearing requirements. As stated in the
17 prefiled testimony, VELCO and their consultants will work with individual property
18 owners to minimize impacts and provide mitigation plantings. The final location of
19 poles will be a function of line design for any multiple circuit structures if this
20 configuration is ordered by the Public Service Board and efforts will be made to locate
21 them in the least impacting location to residents.
22

23 Q25. Do you agree with the DPS-DR-1 recommendations for mitigation on page 26?

24 A25. Yes, except to the extent that they need to be determined by engineering as well as
25 aesthetic considerations. We don't believe the taller poles will be noticeable at
26 distances beyond Black Bear Run, however, if the single pole double circuits are
27 considered further north they may be. We also believe that from South Marshall Road
28 northerly, the two parallel circuits are preferable. Mr. Raphael notes in DPS-DR-1
29 photos, page 93, that the circuits are hardly visible from Route 100 and describes how

1 taller poles will be backgrounded. There is also a row of mature willows between the
2 corridor and Route 100 that provide screening. The need for street trees as
3 recommended in DPS-DR-1 on page 26, item 5, can best be determined in post-
4 construction.

5
6 Q26. Has VELCO considered rerouting to avoid residences through this section?

7 A26. Yes, an alternate corridor was sought. Examination by helicopter and ground
8 indicated the possibility of a much longer route, which would have meant a new set of
9 property owners and issues that would merely be transferred to new parties with
10 increased cost.

11
12 Q27. Do you agree with recommendations in DPS-DR-1, page 27, that the employment of
13 the single pole configuration is desirable from mile 7.7 to 8.2 – the Moscow Road,
14 Little River, and Nichols Field Area?

15 A27. No, if Mr. Raphael is recommending a double circuit single pole design. A double
16 circuit steel structure exceeding 90 feet in height would attract more attention in this
17 open landscape than the two side by side circuits displayed in VELCO Exhibit Boyle-
18 Portz 4-C2. Construction for concrete bases and access would be especially
19 problematic in the wetland area adjacent to the Little River. Single pole 115 kV
20 structures or H-frame designs are preferred in this location.

21
22 Q28. Do you agree with the other recommendations for the Moscow Road, Little River, and
23 Nichols Field Area?

24 A28. Yes. We agree that mitigation planting along Route 100 and in the floodplain are
25 appropriate as described in our prefiled testimony. VELCO and its consultant plan to
26 work with the Stowe Land Trust, the Town of Stowe, and adjacent property owners
27 to supplement the existing diverse vegetative pattern that exists to further screen
28 structures from view.

29

1 Q29. Do you agree with the recommendations for Mile 8.2 to Mile 9.4 from River Road to
2 the Upgrade Terminus at the proposed Stowe Substation as indicated in DPS-DR-1?

3 A29. Yes.
4

5 Q30. Do you agree with the recommendations for the Proposed Stowe Substation as
6 outlined in DPS-DR-1?

7 A30. Generally, we agree. Berms along the entrance driveway, shown on VELCO Exhibit
8 Boyle/Portz-3, 4-B1, accommodate access to an existing residence and likely future
9 residences, so that some non-native species are justified. However, screening along
10 the north edge of the project area does not seem justified as the impact to surrounding
11 properties is limited from this direction. We do agree that screening along the south
12 and east sides should be implemented as depicted on VELCO Exhibit Boyle Part 4b1.
13

14 Q31. Mr. Raphael has proposed separating the two substations (DPS-DR-1, page 30) to
15 save existing vegetation south of the Wilkins Substation. Do you agree with his
16 assertion that this would be an effective mitigation measure?

17 A31. No. Efforts to screen both connected substations would be more productive, as we
18 have indicated.
19

20 Q32. Have you read the testimony of Mr. Orr and Mr. Abraham?

21 A32. Yes.
22

23 Q33. Does VELCO have a response to their proposal?

24 A33. Yes. We have visited the site and VELCO has flagged a proposed right-of-way.
25 From an aesthetic standpoint, this proposal is perfectly acceptable. We have a minor
26 concern with the potential visibility of this change from the Waterbury Reservoir but it
27 appears that existing vegetation will provide adequate screening. Our understanding is
28 that the environmental, archaeological, and other analyses have not been completed,

1 but, clearly, moving the line to the east of Gregg Hill Road and behind the existing
2 residences as proposed is an aesthetic improvement.

3

4 Q34. Does this conclude your testimony?

5 A34. Yes.